Underground News

Providing information to the Water Well, UIC & Underground Hydrocarbon Storage industries in Kansas.

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THE UNDERGROUND HYDROCARBON STORAGE REGULATIONS

By Cina Poyer, L.G.

Liquified petroleum gas and natural gas have been stored in underground salt caverns in Kansas since March 1953. The caverns were formed by solutioning the bedded salt layers of the Hutchinson Salt Member of the Wellington Formation. The solutioning process consists of injecting fresh water or a weak brine solution into the salt deposits. The water dissolves the salt and forms a cavern in the salt. The brine is returned to the surface and is either stored in a brine pond or disposed into a Class I disposal well.

The underground storage of liquified petroleum gas and natural gas is beneficial for many reasons. The underground storage facilities allow for the storage of surplus hydrocarbon products during periods of low demand and making these products available during high demand periods. The storage of hydrocarbon products under pressure in the underground caverns is much more economical than the surface storage of these products in high pressure containers. The underground storage facilities can store large volumes of hydrocarbon in areas closer to the point of consumption. Lastly, many of the above ground operational hazards are eliminated.

The new underground hydrocarbon storage regulations, Articles 28-45 and 28-45a, are significantly more protective of public safety, health, and the environment than regulations that were promulgated in 1981. KDHE addresses the following issues in the new regulations: site selection criteria for new facilities, design and development criteria, operations criteria, casing requirements, monitoring and measurement requirements, safety requirements including public notification, closure and abandonment requirements, including financial assurance, and long-term monitoring. The regulations became effective on August 8, 2003.

GAO Investigation of Class I Wells

By Mike Cochran, L.G.

The General Accounting Office (GAO), the audit , evaluation, and investigative arm of the U.S. Congress, recently completed an audit of commercial Class I hazardous waste disposal wells. The audit was done at the request of U.S. Representative Lynn Woolsey after she received complaints from several environmental groups. The audit focused on environmental justice issues and financial assurance. Of interest to Kansas Class I well operators, the GAO audit concluded that the financial assurance requirements of the Underground Injection Control (UIC) Program are not adequate. In the GAO's report to the Environmental Protection Agency (USEPA), it was recommended the USEPA review and, if warranted, strengthen financial assurance requirements for Class I hazardous waste injection wells. The report stated, in part, if an owner declares bankruptcy and the financial assurance is found to be inadequate, drinking water sources may be at risk and the public may be required to bear the cost of closing the well. The GAO found, in two cases, that the financial assurance for the commercial Class I hazardous waste disposal wells was not adequate to plug the wells.

In its response to the GAO report the USEPA stated that it believes the states have demonstrated a history of success in the important area of financial assurance. GAO's report (GAO-03-761), *Deep Injection Wells: EPA Needs to Involve Communities Earlier and Ensure That Financial Assurance Requirements Are Adequate* can be found at http://www.gao.gov. Although the GAO's audit focused on commercial Class I hazardous waste disposal wells, KDHE believes there are potential implications to other UIC wells including non-hazardous Class I wells and Class III salt solution mining wells. It remains to be seen what USEPA will do with the GAO's recommendations.

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Kansas Department of Health & Environment

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Underground Hydrocarbon Storage Technology Fair Wichita, Kansas - 2003

By Cina Poyer, L.G.

The Kansas Department of Health and Environment (KDHE) and the Kansas Corporation Commission (KCC) hosted an Underground Hydrocarbon Storage Technology Fair in Wichita, Kansas on July 9-10. The KDHE regulates the storage of hydrocarbon in salt caverns that have been developed in the Hutchinson Salt. The KCC regulates the storage of hydrocarbon in depleted oil and gas reservoirs, commonly referred to as porosity storage.

The technology fair focused on the technical issues and the practical aspects of implementing new regulations for the underground storage industry. Topics included well integrity testing, casing inspection logging, sonar surveys, and corrosion control.

The technology fair was well attended with twenty-six exhibitors and 169 participants from eleven states. Surveys from participants indicated that the fair was a success and they were pleased with the fair's focus on the practical aspects of operating a storage facility. The KDHE received numerous requests that the technology fair be continued on either an annual or biennial basis.

Water Well Program Staff Completing License Renewals for 2003

By Richard Harper, L.G.

The Water Well Program is finishing up the yearly Water Well Contractor's License Renewal period. Approximately 170 water well contractors have renewed their Kansas Water Well Contractor's License. Approximately 15 water well contractors have chosen not to renew and KDHE is required, by statute, to revoke their Kansas Water Well Contractor's License.

Staff reviews approximately 500 requests each year for waivers to Kansas Regulations for water well construction, reconstruction, and/or plugging. Each request is reviewed to determine if the request is complete and is protective of the public health and the environment. A written response, with conditions, is prepared and sent to the party requesting the waiver.

KDHE would like to remind everyone that K.A.R. 28-30-6(e) states, "The well casing shall terminate not less than one foot above the finished ground surface. No casing shall be cut off below the ground surface except to install a pitless well adapter unit, which shall extend at least 12 inches above the ground surface. No opening shall be made through the well casing except for installation of a pitless well adapter designed and fabricated to prevent soil, subsurface and surface water from entering the well."

For the three years (2000, 2001, 2002) since the turn of the millennium, 7,562 domestic water wells, 968 irrigation water wells, 352 oil field water wells, and 43 air conditioning water wells have been constructed in Kansas.

(Data from KDHE's Water Well Database 8/03)

SUMMARY OF CLASS V ISSUES

By Kirk Hoeffner, L.G.

The Underground Injection Control (UIC) program has recently experienced an increase in work associated with Class V UIC wells. Class V wells are typically shallow wells used to place a variety of fluids below the land surface. A common type of Class V well is a large capacity (potential to serve 20 or more people per day) septic tank/leach-field system or any leach-field system that might be receiving industrial wastewater. Class V wells receiving industrial wastewater are considered "endangering" to public health and the environment due to their potential to cause soil and groundwater contamination.

The UIC program recently received several complaints and referrals about septic tank/leach-field systems that were receiving motor vehicle wastes. One complaint involved an auto body shop that had paint over-spray discharging to floor drains. Another was a farm implement dealer that was directing vehicle wash water to a leach-field/drywell via a floor drain (see photo).

In the case of the auto body shop, the facility was able to connect to the city sewer system and properly close and abandon the septic tank/leach-field system. Sampling was required to check for contamination of the soil or groundwater prior to closing the system. Sampling was also required at the farm implement dealer. The implement dealer now directs all vehicle wash water to an above ground tank for approved off-site disposal. As a result of these complaints/referrals, KDHE has undertaken additional efforts to determine if other Class V wells are present near these sites.

The USEPA, which administers the federal UIC program and provides grant money to KDHE to implement the UIC program in Kansas, is stressing the importance of locating large capacity cesspools and motor vehicle waste disposal wells which are prohibited types of Class V wells. The USEPA encourages all states to conduct surveys to locate these and other types of Class V wells. KDHE recently conducted a pilot project. This survey involved identifying all facilities in a county with the potential to have a Class V well. KDHE then sent inventory informational letters to those facilities identified. The responses from the facilities are being evaluated by KDHE.

Section Chief's Rathole

By Mike Cochran, L.G.

The summer is almost over and a lot has been accomplished by the Geology Section at KDHE. The new permanent liquid hydrocarbon and natural gas storage well regulations became effective August 8, 2003. These regulations are significantly more protective of public health, safety, and the environment than the previous set of regulations. The mechanical integrity testing of Class I deep disposal wells and Class III salt solution mining wells for 2003 is nearing completion. And the license renewal process for the water well contractors is essentially complete. We appreciate the cooperation of those involved with fulfilling these program requirements to the benefit all Kansans.

The geology section staff is available to answer your questions about the three programs they support. See Page 4 for the applicable contact name and number.

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On the Inside . . .

UIC Workshop For Class I and Class III Operators will be held on November 6, 2003. Check out our web page!

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